OIPE
SEP 10 2004
PATENT & TRADEMARK OFFICE

FIG. 1A

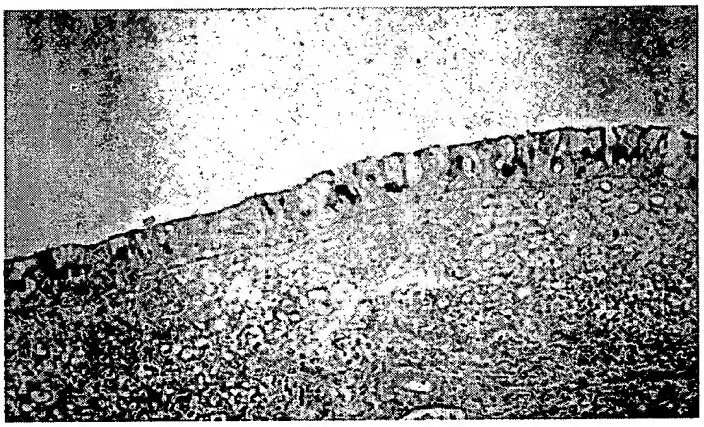

FIG. 1B

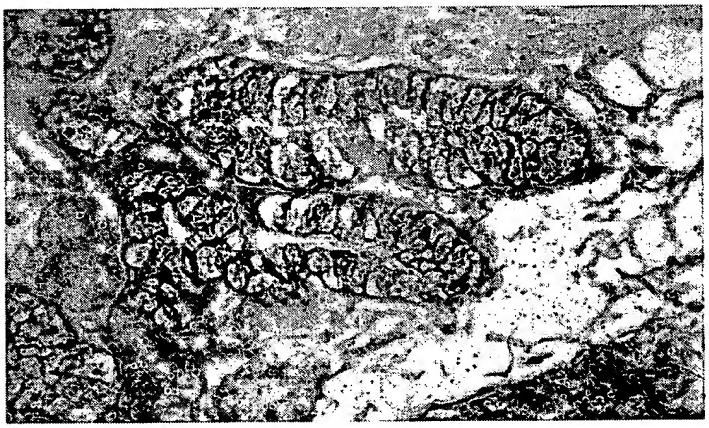

FIG. 1C

BEST AVAILABLE COPY

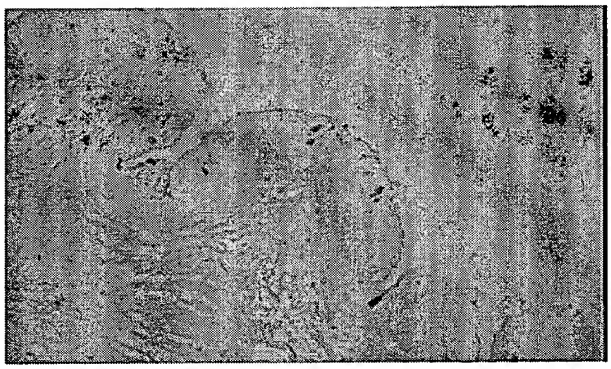

FIG. 2A

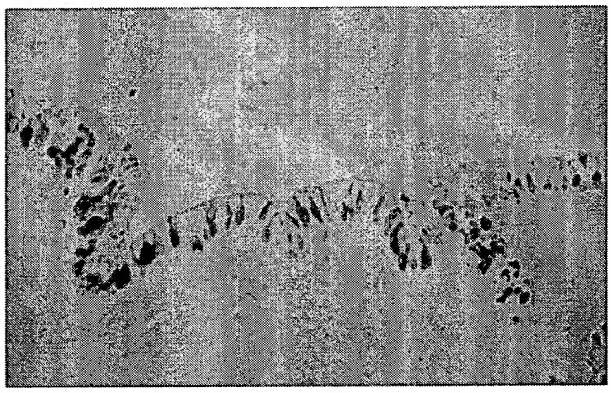

FIG. 2B

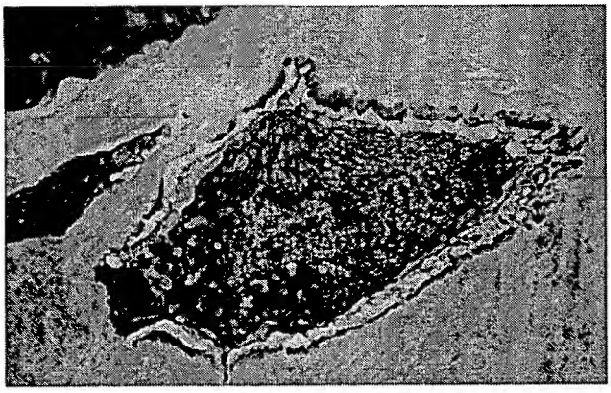

FIG. 2C

BEST AVAILABLE COPY

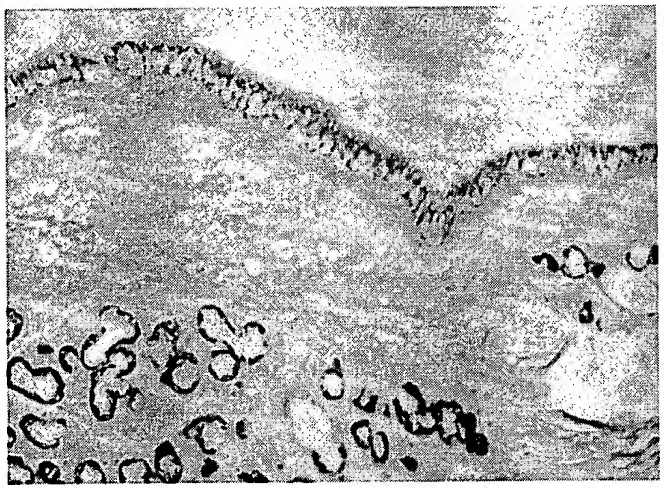

FIG. 3A

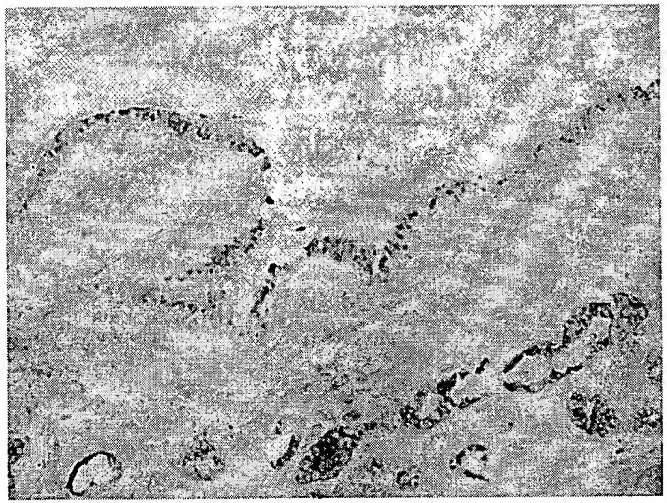

FIG. 3C

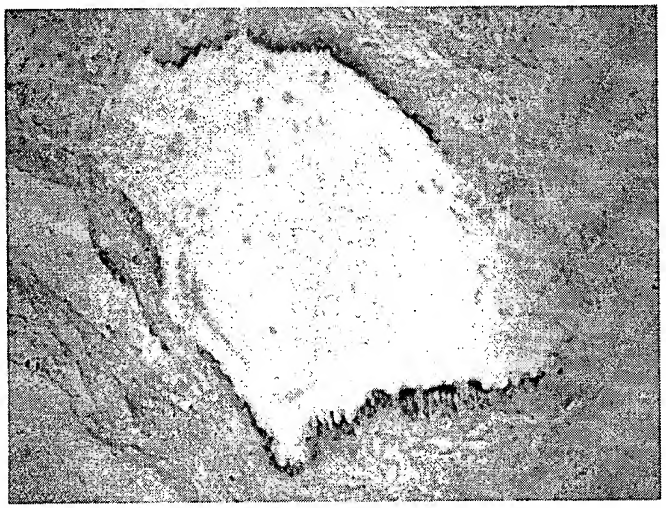

FIG. 3B

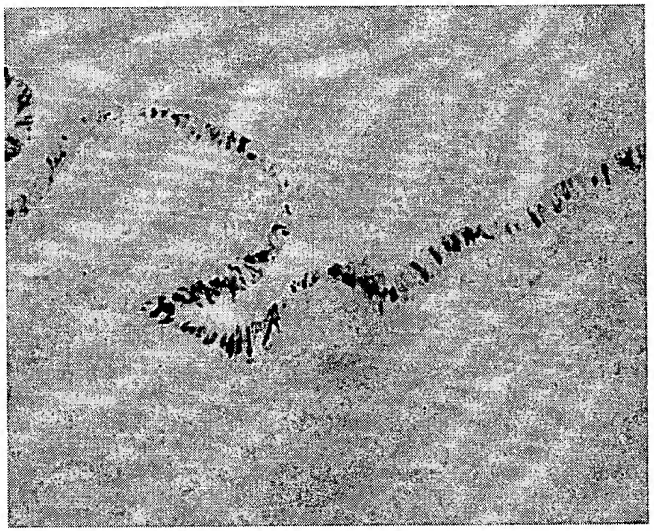

FIG. 3D

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FIG. 4A

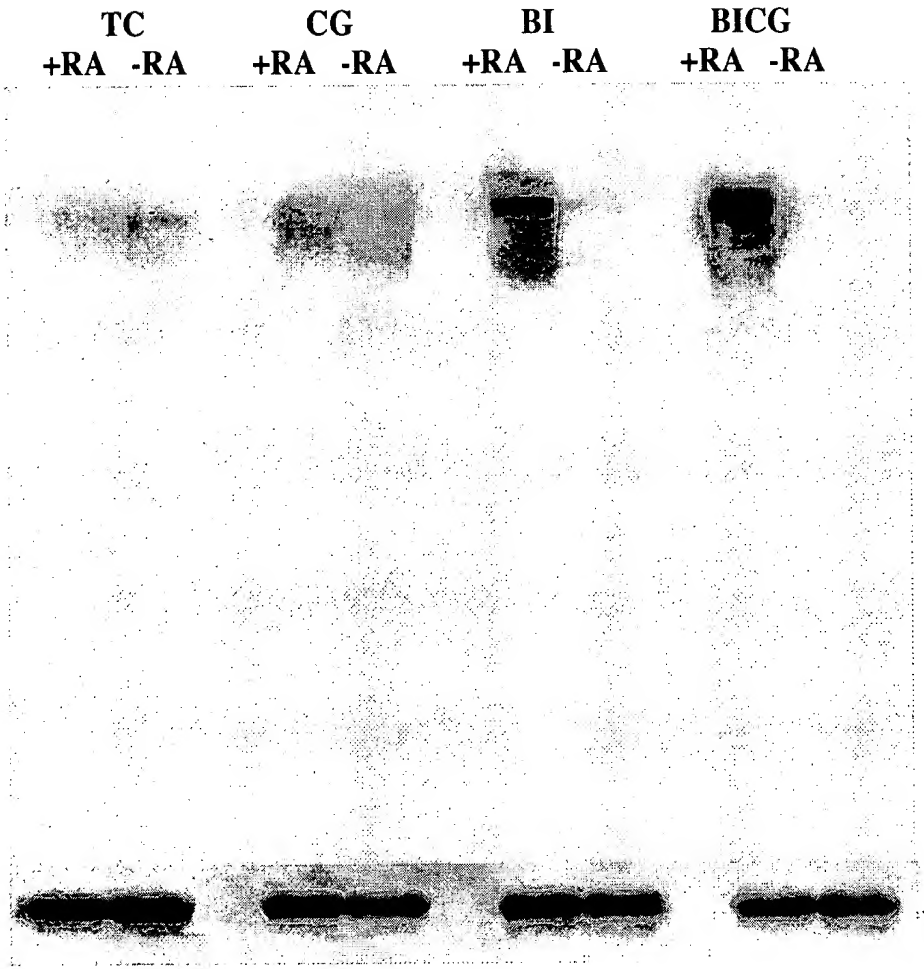
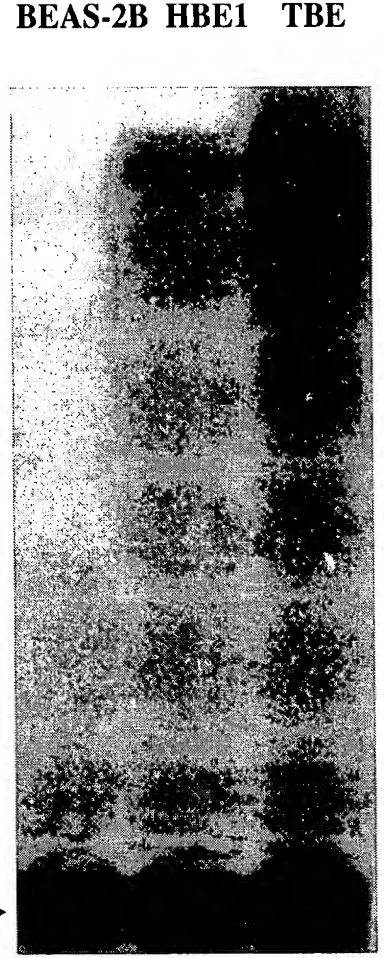


FIG. 4B



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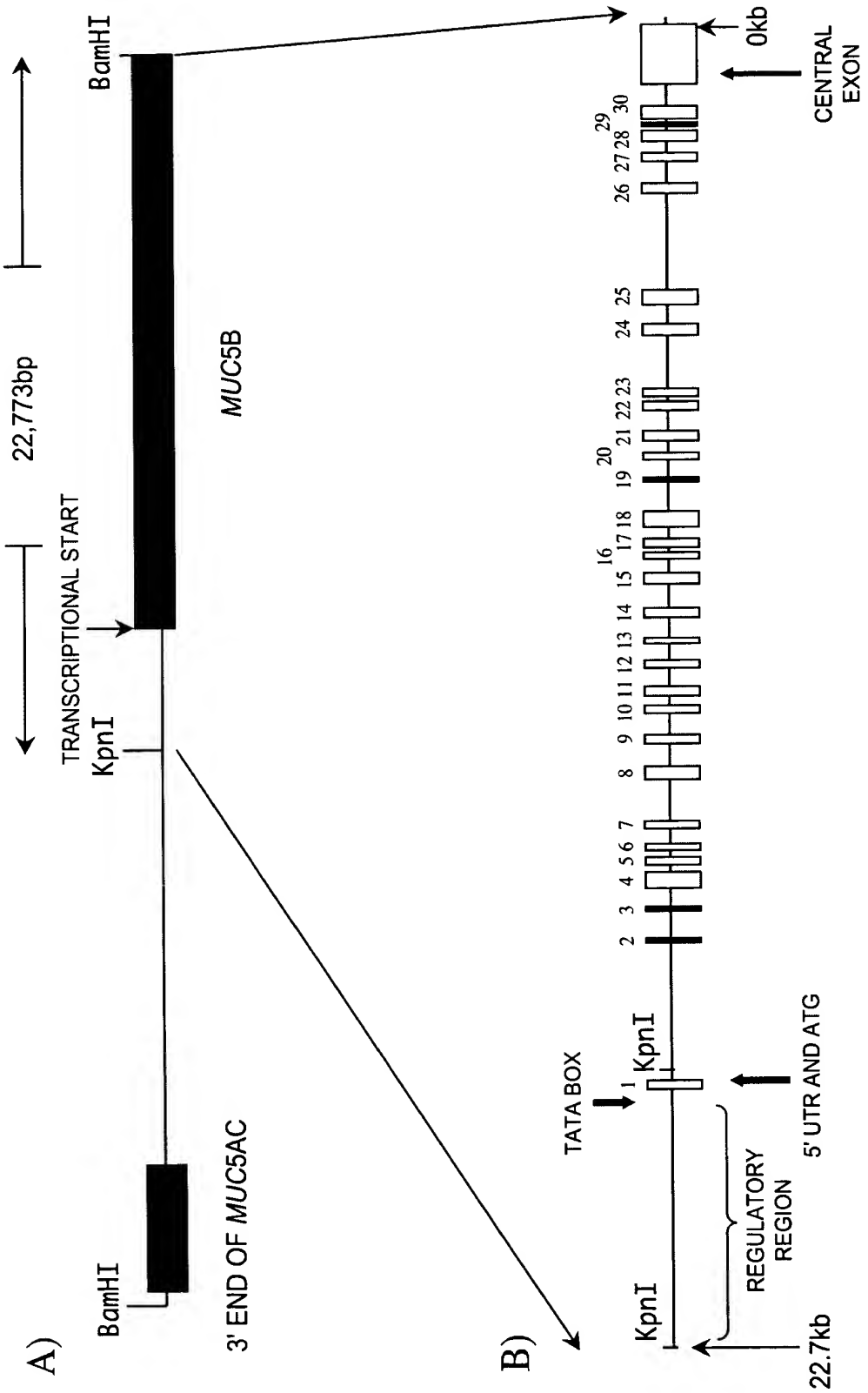
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KpnI
TRANSCRIPTIONAL START
22,773bp
BamHI
MUC5B
B)
KpnI
REGULATORY REGION
22.7kb
TATA BOX
1
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
5' UTR AND ATG
0kb
CENTRAL EXON

FIG. 5

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```

FIG. 6A

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```

FIG. 6B

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9181 cttcccacca gcaggtggac tcagaagggg cctggaggct ccaggatccc caaaccagca
```

FIG. 6C

```
 9241 ggatctctga gccttaaatt gtgctgtgaa tgacagcatg agcccccctg tgagctgggc
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10201 tgtggaaggc cgtggaaggc ggctggggct gaccacacgg gcagtacagg gcccttcccc
10261 tggcccagcc ccgcctcctt ttgcgcagcc cggacctgcc ccctcaacat gcagcaccag
10321 gagtgtggct caccctgcac ggacacctgc tccaaccccc agcgcgcgca gctctgcgag
10381 gaccactgtg tggacggctg cttctgcccc ccaggcagtg cttgtgtgcc ctgaacccct
10441 caggggggctt tcaggtccct gctcccaace ccgccccag cctcatcagg cctggaagca
10501 gagcccctca tgccagaagg tcccaccaga gggcccaggg tgggaagggc actggctggg
105S1 agggtgctgg aagacctgcc gatgcgtgga gggaggtaga gcagtgccat gagccagctg
10621 ggcatggtgg ggaaactgag gcccagaggt gcttggtgtt catccaagcg agtgcagctc
10681 agggcggggg cagtgtcctg gagcaggaat tcctccccaa gggaggcagc ttgtccccaa
10741 ggccggtgtc ttctgacctt ggtgtccccc gtgcatgggc cggccctgcc tcacgccgcg
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11101 ctgctcacgg cctccctccc cagcacctgc tccggggggc tatggcagtg ccaggacctg
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11221 ctctacgacc tgcatggtga ctgcagctac gttctgtcca aggtctgggc ttggggccgg
11281 gtcttcagac acccagaccc tcctgggacc ctcatgccac ttccacccag gggaggcccc
11341 cacgatggtc atagaggggt ggatgtccct gctgaggggg gagccctggg tccccatgat
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11521 cccccacatg ggcatcccca gcacacttct ggggggcacc ccacatcatc gagccaggcc
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11701 cctggacggc ggggacacgg tgaggacctg gctggggccc tgggctggga caggaagagg
11761 catgcgaagg tgtgtgggga gcaagcacgg tcaggtcccc ctccagcccc gaggccaggt
11821 ccccctcca gcccccaggc caggtccccc tccagcccc aggtcaggtc ccccctccag
11881 ccctgaggtc aggtcctccc ggggggggcaa ttgcagagcc caccgcaggt ccaggcctga
11941 gcttctctgt gggctctgtc cccagtgggg gcccctgggc aggccacccc ctcatttgag
12001 agtcgggaat gggttcctcc ccagagctga cctcccgccc gcctccttcc gcaggccatc
12061 cgggtccaag cggacggcgg cgtgttcctc aactccatct acacgcagct gcccctgtcg
12121 gcaggtatgt ggctctccca ggacggccgg gctgggtggc gcctgcttgc aggggcagct
12181 cccacagcct gggcagcgtc cgctccatcc ctgctagttc tccgtggcct cgggcagctc
12241 caggagctcc ctgtgctcgg tttctcgtct gcagagtggg gatgccaggc tcccaccccg
```

FIG. 6D

```
12301 gcagcggcag ggaccccaca tccagctcgc tcagccccac tctctcaggg agcccggtct
12361 ccacctgagc ccacttggcg gccacaggca tgggacaggg agcctgaggg ctcctggcca
12421 ctcctgggtc tcactcccgg gtctcagtgg ggtggcccgg cccactggat gccctgcccc
12481 tccaatctag ccagatctgt ccctgcaccc ctgaccggcc tctcccccac actcccggca
12541 gccaacatca ccctgttcac accctcgagc ttcttcatcg tggtgcagac aggcctcggg
12601 ctgcagctgc tggtgcagct ggtgccactc atgcaggtgt ttgtcaggct ggaccccgcc
12661 caccagggcc agatgtgcgg tgaggctggg caggggcctt cggggacagg gccattgggg
12721 acggggcctg gactagcgcc aggctgcagg gaggggcagg cagaggcggg caggggaccg
12781 gggagggggc tgcccccagg gcatggcgga gatcctggtg ccagcgcagg acaccagcat
12841 tggaccagcg gccccggaag cagecagctg ggaggatgga gcgggcagcc ctgccctggc
12901 tcaggccgac tttgcacagg ggctggcttt gcacaggggc cgactgcaca ggggcgcccc
12961 ccgccagggc ttatctgcag agggttctgg gagcagaatc ctgggacagg gctcccagcc
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13861 gctcagcgac tggagggacg gcgtctgcag tgagtgccca cgctgggggt gggatgtgtc
13921 cacaccgcgt gggggtgcgg gggaccctgg ccggcagcag ccgtcactca cacggttctc
13981 agcccagagc tttgcacttc ctcatcccag cctcgcaaga acctcatgcc cttgcgatcc
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14941 tgggagcctc tctgcagaaa agcacaggta agtgccaccc ctgccctgcc ctgccccgcc
15001 ccgcatcacc ccgcctggcc tggccccaac acgccccacc ctgccccacc ccacctgaac
15061 cctgccgggc caggtcagtc ctcacctggg ctctgccaca ggcacccatg ccctgacacg
15121 ccagggacgg aggggccagt gggtctctgc cccgcagtgt ggccggggtg tcctggggtt
15181 gggggctgca ggtgtcatgg aagctttggc tcgggggctg ttaacttgat cagcaggaca
15241 ggctcagggc tgcctggggt cagttgaggg ccgtggctgc ccttccccag gacccctccc
15301 accaagctct gtccccaggg tgtgcagccc ccatggtgta cctggactgc agcaacagct
```

FIG. 6E

```
15361 cggcgggcac ccctggggcc gagtgcctcc ggagctgcca cacgctggac gtgggctgtg
15421 tgagttccat gcttcaggga ggggtgggca gggaaggggt cccagctttc ccagctcccg
15481 agcccaggga tctggtggtc ctggagacac ttacccacct ggaagctccg ccctggccca
15541 tgcgttgccc tgggtgctgc tgggtgcgcc tgtcccagag ggtgagtgac atctgcccac
15601 cctggtgtcc agccctgacc ggtacctgcc tgggccccac agttcagcac acactgcgtg
15661 tccggctgtg tctgtccccc ggggctggtg tcggatggga gtgggggctg cattgccgag
15721 gaggactgcc cctgtgtgca caacgaggcc acctacaagc ctggagagac catcagggtc
15781 gactgcaaca cctggtgggt cgtgagtctc tcggaggcag caggtgggga gggcgggggc
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18241 tcctccacgg ccccaccttc gccgcctgcc gctcccaggt ggggctctgg tcttggcagg
18301 cagggtctgg tggggatggc agttgcttcc ttcccgccga gaactgggtc ttctgggcag
18361 acagcagcgc tccaaggagg gtctgaccat gtcccacggc acacagtcct ggatgtcagg
```

FIG. 6F

```
18421 tcccaagtcc ggatctcccg tcagccccac acctgtgcct cttgcccctg gcacgaagcc
18481 atcttggctg tttcccggcc actcctttga ccacagcctc agtcacaccc agaggctcac
18541 agggaggggc agccctctat gtggccccta gccaccctcc tctatgatcc ccagacctgc
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18721 tgtctgtaat cccagcactt tgggacgctg aggcaggtgg atcacctgag gtcaggagtt
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21361 tggcgcctgc ttgatcgcca tctgcggaag caacggcacc atcatcagga aggctgtggc
21421 atgtcctgga actccagcca caacgccatt caccttcacc accgcctggg tcccccactc
```

FIG. 6G

```
21481 cacgacaagt aagccctgcc tggctctcct gaggcccagt actgtctggg tgacaaggag
21541 gacccccctgg gctcttagtg caggtgccct gtatggtagc gacagtccca atccactgac
21601 cttccgggct ctgtctaggg gtgcacggcc cctcaacacc ctgcgtgtct ccaggggctc
21661 cccacgaagc ctcagcacaa tgattgatgg gataccccaa ggagacaata aagctttcct
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22441 agactgggtc cagctcaggc cccgtgacgg tcacccccctc ggccccaggt accaccacct
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22561 ttggagggga cgttgagtcc tacgataaga tcagggccgc tggagggcac ttatgccagc
22621 agcctaagga catagagtgc caggccgaga gcttccccaa ctggaccctg gcacaggtgg
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FIG. 6H

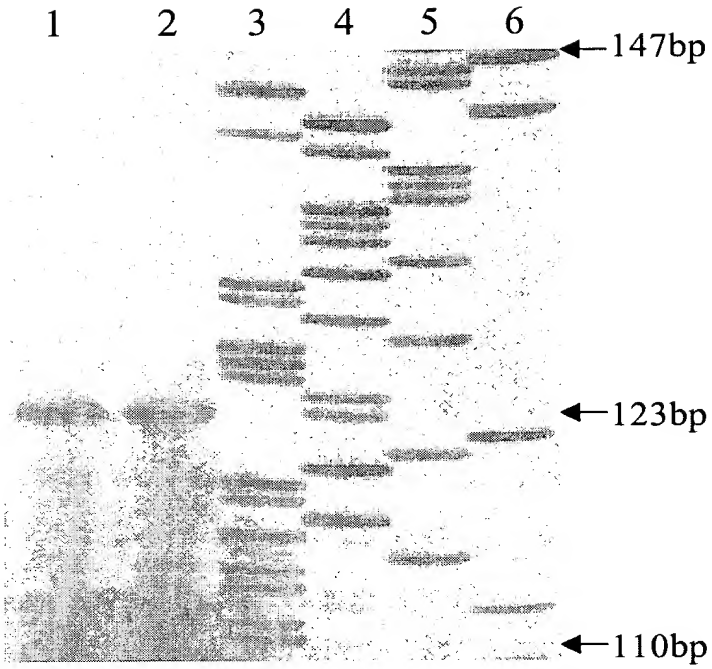

FIG. 7

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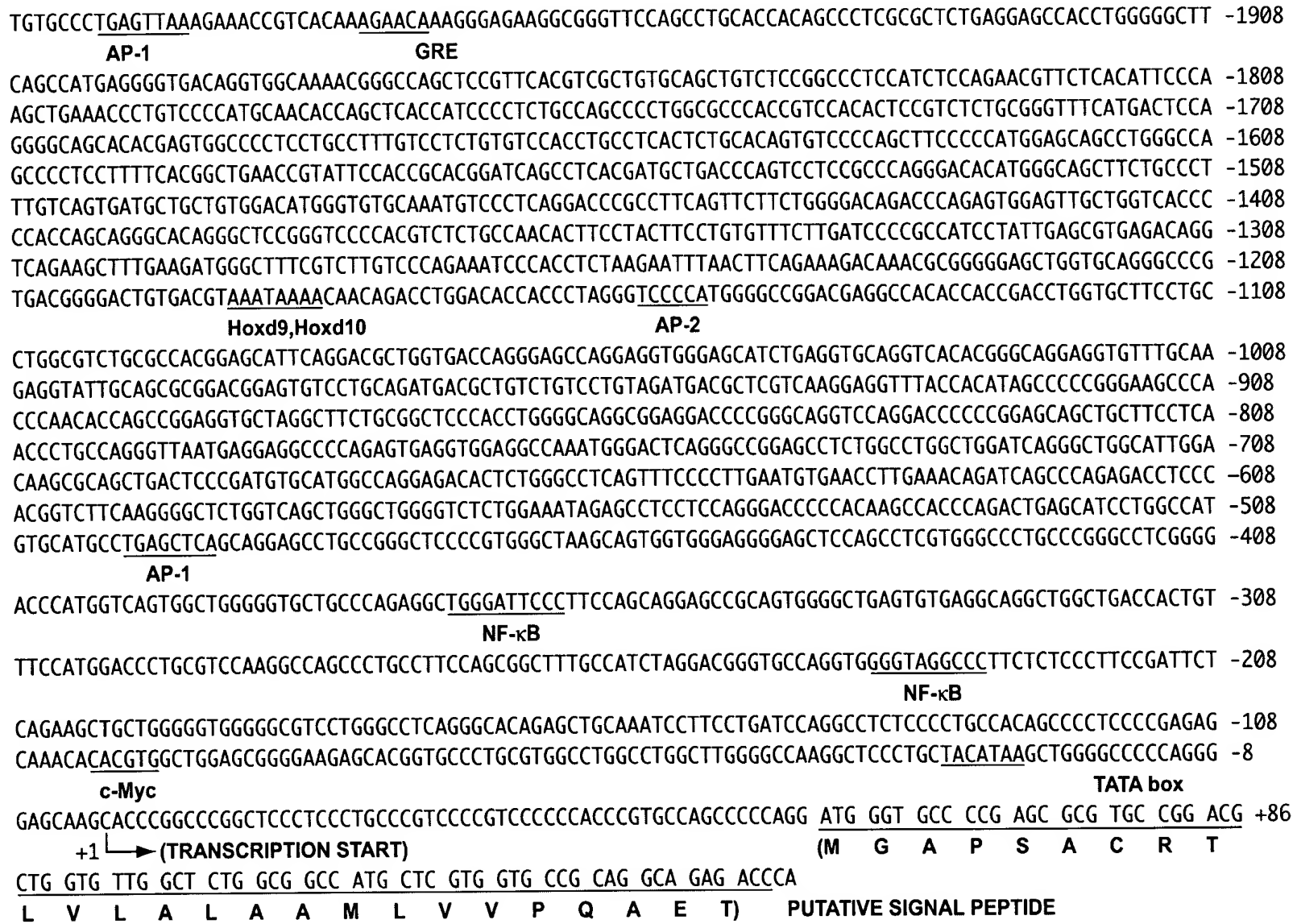
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GRE
CAGCCATGAGGGGTGACAGGTGGCAAAACGGGCCAGCTCCGTTCACGTCGCTGTGCAGCTGTCTCCGGCCCTCCATCTCCAGAACGTTCTCACATTCCCA -1808
AGCTGAAACCCTGTCCCCATGCAACACCAGCTCACCATCCCCTCTGCCAGCCCCTGGCGCCCACCGTCCACACTCCGTCTCTGCGGGTTTCATGACTCCA -1708
GGGGCAGCACACGAGTGGCCCCTCCTGCCTTTGTCCTCTGTGTCCACCTGCCTCACTCTGCACAGTGTCCCCAGCTTCCCCCATGGAGCAGCCTGGGCCA -1608
GCCCCTCCTTTTCACGGCTGAACCGTATTCCACCGCACGGATCAGCCTCACGATGCTGACCCAGTCCTCCGCCCAGGGACACATGGGCAGCTTCTGCCCT -1508
TTGTCAGTGATGCTGCTGTGGACATGGGTGTGCAAATGTCCCTCAGGACCCGCCTTCAGTTCTTCTGGGGACAGACCCAGAGTGGAGTTGCTGGTCACCC -1408
CCACCAGCAGGGCACAGGGCTCCGGGTCCCCACGTCTCTGCCAACACTTCCTACTTCCTGTGTTTCTTGATCCCCGCCATCCTATTGAGCGTGAGACAGG -1308
TCAGAAGCTTTGAAGATGGGCTTTCGTCTTGTCCCAGAAATCCCACCTCTAAGAATTTAACTTCAGAAAGACAAACGCGGGGGAGCTGGTGCAGGGCCCG -1208
TGACGGGGACTGTGACGTAAATAAAACAACAGACCTGGACACCACCCTAGGGTCCCCATGGGGCCGGACGAGGCCACACCACCGACCTGGTGCTTCCTGC -1108
Hoxd9,Hoxd10
AP-2
CTGGCGTCTGCGCCACGGAGCATTCAGGACGCTGGTGACCAGGGAGCCAGGAGGTGGGAGCATCTGAGGTGCAGGTCACACGGGCAGGAGGTGTTTGCAA -1008
GAGGTATTGCAGCGCGGACGGAGTGTCCTGCAGATGACGCTGTCTGTCCTGTAGATGACGCTCGTCAAGGAGGTTTACCACATAGCCCCCGGGAAGCCCA -908
CCCAACACCAGCCGGAGGTGCTAGGCTTCTGCGGCTCCCACCTGGGGCAGGCGGAGGACCCCGGGCAGGTCCAGGACCCCCCGGAGCAGCTGCTTCCTCA -808
ACCCTGCCAGGGTTAATGAGGAGGCCCCAGAGTGAGGTGGAGGCCAAATGGGACTCAGGGCCGGAGCCTCTGGCCTGGCTGGATCAGGGCTGGCATTGGA -708
CAAGCGCAGCTGACTCCCGATGTGCATGGCCAGGAGACACTCTGGGCCTCAGTTTCCCCTTGAATGTGAACCTTGAAACAGATCAGCCCAGAGACCTCCC -608
ACGGTCTTCAAGGGGCTCTGGTCAGCTGGGCTGGGGTCTCTGGAAATAGAGCCTCCTCCAGGGACCCCCACAAGCCACCCAGACTGAGCATCCTGGCCAT -508
GTGCATGCCTGAGCTCAGCAGGAGCCTGCCGGGCTCCCCGTGGGCTAAGCAGTGGTGGGAGGGGAGCTCCAGCCTCGTGGGCCCTGCCCGGGCCTCGGGG -408
AP-1
ACCCATGGTCAGTGGCTGGGGGTGCTGCCCAGAGGCTGGGATTCCCTTCCAGCAGGAGCCGCAGTGGGGCTGAGTGTGAGGCAGGCTGGCTGACCACTGT -308
NF-κB
TTCCATGGACCCTGCGTCCAAGGCCAGCCCTGCCTTCCAGCGGCTTTGCCATCTAGGACGGGTGCCAGGTGGGGTAGGCCCTTCTCTCCCTTCCGATTCT -208
NF-κB
CAGAAGCTGCTGGGGGTGGGGGCGTCCTGGGCCTCAGGGCACAGAGCTGCAAATCCTTCCTGATCCAGGCCTCTCCCCTGCCACAGCCCCTCCCCGAGAG -108
CAAACACACGTGGCTGGAGCGGGGAAGAGCACGGTGCCCTGCGTGGCCTGGCCTGGCTTGGGGCCAAGGCTCCCTGCTACATAAGCTGGGGCCCCCAGGG -8
c-Myc
TATA box
GAGCAAGCACCCGGCCCGGCTCCCTCCCTGCCCGTCCCCGTCCCCCCACCCGTGCCAGCCCCCAGG ATG GGT GCC CCG AGC GCG TGC CGG ACG +86
+1 (TRANSCRIPTION START)
(M G A P S A C R T
CTG GTG TTG GCT CTG GCG GCC ATG CTC GTG GTG CCG CAG GCA GAG ACCCA
L V L A L A A M L V V P Q A E T)
PUTATIVE SIGNAL PEPTIDE

FIG. 8

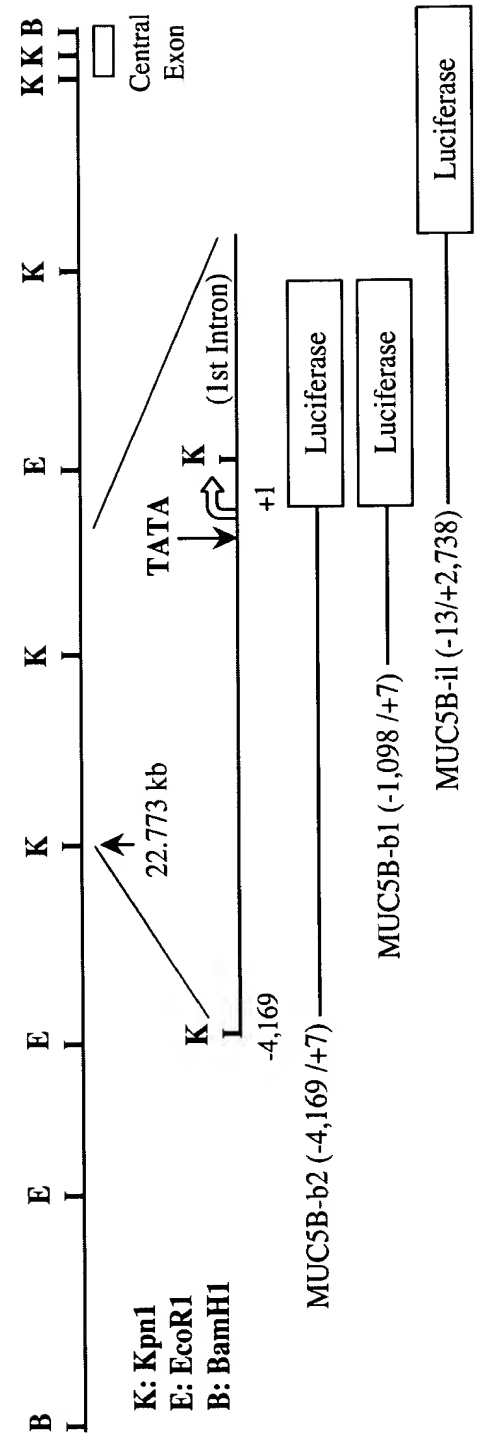
B
E
E
K
K
E
K
K K B
Central Exon
22.773 kb
K
TATA
K
(1st Intron)
+1
-4,169
K: Kpn1
E: EcoR1
B: BamH1
MUC5B-b2 (-4,169 /+7)
MUC5B-b1 (-1,098 /+7)
MUC5B-il (-13/+2,738)
Luciferase
Luciferase
Luciferase

FIG. 9

(-1098) ggcgtctgcg ccacggagca ttcaggacgc tggtgaccag
ggagccagga ggtgggagca tctgaggtgc aggtcacacg ggcaggaggt
gtttgcaaga ggtattgcag cgcggacgga gtgtcctgca gatgacgctg
tctgtcctgt agatgacgct cgtcaaggag gtttaccaca tagccccgg
gaagcccacc caacaccagc cggaggtgct aggcttctgc ggctcccacc
tggggcaggc ggaggacccc gggcaggtcc aggacccccc ggagcagctg
cttcctcaac cctgccaggg ttaatgagga ggccccagag tgaggtggag
gccaaatggg actcagggcc ggagcctctg gcctggctgg atcagggctg
gcattggaca agcgcagctg actcccgatg tgcatggcca ggagacactc
tgggcctcag tttccccttg aatgtgaacc ttgaaacaga tcagcccaga
gacctcccac ggtcttcaag gggctctggt cagctgggct ggggtctctg
gaaatagagc ctcctccagg gacccccaca agccacccag actgagcatc
ctggccatgt gcatgcctga gctcagcagg agcctgccgg gctccccgtg
ggctaagcag tggtgggagg ggagctccag cctcgtgggc cctgcccggg
cctcggggac ccatggtcag tggctggggg tgctgcccag aggctgggat
tcccttccag caggagccgc agtggggctg agtgtgaggc aggctggctg
accactgttt ccatggaccc tgcgtccaag gccagccctg ccttccagcg
gctttgccat ctaggacggg tgccaggtgg ggtaggccct tctctccctt
ccgattctca gaagctgctg ggggtggggg cgtcctgggc ctcagggcac
agagctgcaa atccttcctg atccaggcct ctcccctgcc acagcccctc
cccgagagca aacacacgtg gctggagcgg ggaagagcac ggtgccctgc
gtggcctggc ctggcttggg gccaaggctc cctgctacat aagctggggc
ccccagggga gcaagcaccc gg (+7)

FIG. 10

(-4169) ggtacccctg gttgtgcctg tcgctcagtg ggccagggtc
taagggctgt gaagactcaa catgccccca cctgctactt ctgaacacca
ggcactggct ctgagacccc cgggccttgc tggacatctc cccaggtgta
ctgggccagg ggacaggggc ctggccatcc caacacccag gagcaagcag
cccgtcacct gcccaggtcc ccgaggcccg gaacaccttc ctgctgggcc
cacccagccc tggacctgtc ccgcttggtc acacgatggg accctcggcc
catcagcagg tgagccccca ggagcgtgcg tctggcctgg taaggcctcc
accccaggag ttgggggggcc cccgtgccag ggagcaggag gctgccgagg
tggagggtcc cacacagcta ccactcccta tccccagcac agcctggggc
ctggctctga gtacacatcc tggggcctgg ctctgagcag accaagagcc
catccctgct ttgtgacccc ctgggctgtg cctgacaccc caggtgtcca
gcgtggagct ggggcccagc tcagtgcctg ggagctgatg gaccctgggg
cccggctcag tgcctggtgg ctgatggaca ctggggcctg gctcaaacct
gcaccgctgt ggtcgggggа ggggagggct gagccacgtg gggaacccag
ccccagtgac gactctttgc ggtggccaag ccctccaggt gtcccccagg
gctgaggggc tgggcttggg gcagctggtg acagcagatg gtggccctga
tcactggtgc ctggacggcc tctgaagggg tctgtggggt cctggacggg
tccccattca tggcaggatt aacccccctc gggttctgtg tggtccaggc
cgccccttтg tctccactgc cccctggcca gaatgaggga cagtgaccca
cccagggctg ggcctggctc agactccgtc agagccgcag ggcaagttcc
tggcacgtcc gaggtgggag gctcctctgc gctccaggag gctgtgcctg
gccccccttc ccggcaggaa ccggctgtgt ccctttcctt cctttatctt
ctgttttcag cgccttcaac tgtgaagagg tgaactcttc aaacacgctg
agcaaacagg cccgactccc agggccgcat ccgggatgtc tcaatagctg
tggccttgac gtccacctcg gacccctgcc ccggacccag cccagttccc
aatgggccct ctgcccgggg aggtgcctag tgggagggac gagggcaaag
tcggggcccc cacttgtttg gtgtcactgt gtgccagcgg ccactggcgg
gcgaggctgt tccagggtgg aggcggggag ggttggacca caggcactga
gcggggacag aggagctgcc tgagggtccc agctctgcca tggagaaaac
gctatctcgc tgatgcagag gtgcccggcc cactcgagct gggggtgagg
gggctgctcc ccagtgggcc gccagccccc atgaaggccg cgggcaccgg
ccgtggtcag ggagggcagg ggacaggcag tgggggccag caggggagac
actaggcttg gccccagcac ccaggtgggc atcggcttgt gagctggagc
cgcgggcagg gaggggggat gtcacgaggg cttggctaag gtgggagacc
tgggcgggtg cgtcgggggg acgtctgcag cagaggcctg ggcagcaggc
acacccctcc tgccagtgcg aggaacgagg cgccacagcg gccggtagcc
ccccatttgc ccagcctggc ctggagcagg caggaaggcc ggggagaggg
gtctggctgg ggcctgggtg cagtcacagc cacgagccca ggggtgggga
ctctggccca cccttcagac catgctcaag gcccactggc ccaggcatgc
ccgccacccc ttccaccgtg ccgtgctgca gcgggtctac cggcctggat
gtgaaagaga gcttggagac cccagagacc tcggaacctt cagctttgga
agtgacgtcg gtggggtggg tgggggggagc acaggctctg gagtcccgga
agtgagcggg gagctacgct gagatctggg agacccccctg cccccaccca
ggtacagggc caggcagaag cccgaggtgt gccctgagtt aaagaaaccg

FIG. 11A

tcacaaagaa caaagggaga aggcgggttc cagcctgcac cacagccctc
gcgctctgag gagccacctg ggggcttcag ccatgagggg tgacaggtgg
caaaacgggc cagctccgtt cacgtcgctg tgcagctgtc tccggccctc
catctccaga acgttctcac attcccaagc tgaaaccctg tccccatgca
acaccagctc accatccccc ctgccagccc ctggcgccca ccgtccacac
tccgtctctg cgggtttcat gactccaggg gcagcacacg agtggccccc
cctgcctttg tcctctgtgt ccacctgcct cactctgcac agtgtcccca
gcttccccca tggagcagcc tgggccagcc cctccttttc acggctgaac
cgtattccac cgcacggatc agcctcacga tgctgaccca gtcctccgcc
cagggacaca tgggcagctt ctgccctttg tcagtgatgc tgctgtggac
atgggtgtgc aaatgtccct caggacccgc cttcagttct tctggggaca
gacccagagt ggagttgctg gtcaccccca ccagcagggc acagggctcc
gggtccccac gtctctgcca acacttccta cttcctgtgt ttcttgatcc
ccgccatcct attgagcgtg agacaggtca gaagctttga agatgggctt
tcgtcttgtc ccagaaatcc cacctctaag aatttaactt cagaaagaca
aacgcggggg agctggtgca gggcccgtga cggggactgt gacgtaaata
aaacaacaga cctggacacc accctagggt ccccatgggg ccggacgagg
ccacaccacc cgacctggtg cttcctgcct ggcgtctgcg ccacggagca
ttcaggacgc tggtgaccag ggagccagga ggtgggagca tctgaggtgc
aggtcacacg ggcaggaggt gtttgcaaga ggtattgcag cgcggacgga
gtgtcctgca gatgacgctg tctgtcctgt agatgacgct cgtcaaggag
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aggacccccc ggagcagctg cttcctcaac cctgccaggg ttaatgagga
ggccccagag tgaggtggag gccaaatggg actcagggcc ggagcctctg
gcctggctgg atcagggctg gcattggaca agcgcagctg actcccgatg
tgcatggcca ggagacactc tgggcctcag tttccccttg aatgtgaacc
ttgaaacaga tcagcccaga gacctcccac ggtcttcaag gggctctggt
cagctgggct ggggtctctg gaaatagagc ctcctccagg gacccccaca
agccacccag actgagcatc ctggccatgt gcatgcctga gctcagcagg
agcctgccgg gctccccgtg ggctaagcag tggtgggagg ggagctccag
cctcgtgggc cctgcccggg cctcggggac ccatggtcag tggctggggg
tgctgcccag aggctgggat tcccttccag caggagccgc agtggggctg
agtgtgaggc aggctggctg accactgttt ccatggaccc tgcgtccaag
gccagccctg ccttccagcg gctttgccat ctaggacggg tgccaggtgg
ggtaggccct tctctccctt ccgattctca gaagctgctg ggggtggggg
cgtcctgggc ctcagggcac agagctgcaa atccttcctg atccaggcct
ctcccctgcc acagcccctc cccgagagca aacacacgtg gctggagcgg
ggaagagcac ggtgccctgc gtggcctggc ctggcttggg gccaaggctc
cctgctacat aagctggggc ccccagggga gcaagcaccc gg (+7)

FIG. 11B

(-13) ccagggga gcaagcaccc ggcccggctc cctccctgcc
cgtccccgtc cccccacccg tgccagcccc caggatgggt gccccgagcg
cgtgccggac gctggtgttg gctctggcgg ccatgctcgt ggtgccgcag
gcaggtaaga gccccccact ccgccccctc tcgatgctgt cttcacggcg
ggggtctctg caggtcgctt gcctgggagc ttctcctgca gagtgcacgg
gcagatcccc ctacgactcc ctgagtgtcc tggatgggac cctacccgtc
cccaacacag ggctctgggg ccccacgggc tcacagtgtc aggaaactca
ggggctggct tggatggggt gtccaggaga aggtgggccc ctgaccgcag
ggcaaggccc ctgggagacc accgaaaggg tcttggtctt gggggtggga
caggagtggg caatggggga gggggtcaca gctgggggtc tctctggagc
cccatgaggc ccaggcatca gagtgagcag gggcaggctt agcgtggacc
cctgtccagg accggctcta cccttcacga cctccctggg gatcacagct
ggcagggcag gtgagggtac ccgggaccct caagggttgc acagccagcc
gcaagagccc cggcctcaac ccacgctcga ctcccacggc ccatctgtgg
gcatctcatg ccgcacgggc tgcctggctc tcagccgagc gttttccctc
gtctgctgtc tcttggccag agccgcagca ttaatactta ctgtcaatag
agaaagatgc agccccaggg gccaccggga gacacccagc caggctggcc
atgaggctgc tgcagcccct ccctgccccg ccctccgccc cctcccaagc
ttggggtctg ggctgggcag gtgaggttcc ctggggtctc tctccatctg
tggaagggag gctgggtggt cagcagggct ggaggcaggg ggcttccccc
agtggctccc agcctgggcc cgggggggagc tgcgtctggc tgcaaggttt
gggggctggt ttgaccagaa tagccacctc cttgcatctg attcttccgg
gccatgcagc cttggctccc ctcacctgag caggcagggc ctagggactc
tcagcccacc cgtcctcctg tcctccacgc acgtccaagt tggggagatc
aagcccttgg cagggactgt gctttagtca ccagatgcac gtcctgtggc
cggggaaggc agccctgcac agagcagctt catgttaggg gacacacccc
aaagtgatgg ggtggctggt ggtgggcact tctctggcta caagatggag
gcccaggtgg tccagcccaa ggagggcact gcacggagca gataaccaag
ggcagtcagc ctgggcaggg gaggggctgc ctgggggga ggggttgcct
gggttgggga ggggctgtct ggggcagggg aggagctgcc tggggcgggg
gaggggctgt agggccaggg aggggctgcc tggggctggg gaggggctgc
tggggtgggg aggggctgcc tgcggcggga gccggggcgt gggagtggct
ggttgggctg gcacacaggg gcagggctgt gagctgtggg tcggggtgga
ggactcaggg atcggctggc tttctgggaa aggcagtcaa cctggatctc
tggaggcggc ccctgtggtg gttcccagat gtcagcagga cctggctgga
aaagccaggc agggccaggc cagagtgcga accacagggc cggcccctcg
ctgagccctg accatgcttg tgggggctgg ggcctcacct cccacctccc
cacagagagt ctcagatcag gatccaggga ggagctctgg ggtcctgtga
agggggcgcc ccaacccaaa ctgggcagac aatggccggg ggtcctcaga
gtcctgtggg ttggagctgc ctcctcccag cctccatggg gttggtgggt
gaggccttgc ccggaggcgg tggtcagcct gggggacctt gggcggccat
cccagtatca acggccacac agcttgcgcg gcccagagtc ctgcccccag
cctgccccac tcgccctgac ttaggatcta gttcgaaact ggttctgtgt
ttaggtttct gctaagtcac gcctggaagg ctccaagtgt gtcctcctaa

FIG. 12A

caaagctggt ctttgtcctt ctccaaggga tgtgtgggat ggggcgaaat
ccccccttgg ggcggccaac gcctttcct gattccattt tctcccccat
cccttgagaa ggaggcacca tccccgcctg tcagtcgggg acagggcagg
ccgtgctggg ggcagctcag ggctccctgc tggaagcttc catcccgcag
gctttccata gcattgagca ggagcggagg catctgcggc tgacggttgg
ggtggcctga gcggctgggg aggagtcccg gccttggcca cagtgtgtcg
tgagggtgaa cctgcagggc atggagaccg ccaccaagga ccccacatgc
ggctgccgca ccagggatgt ggccaggtcc gtggttgggt tcgtggctgg
cagccacatc tagttcctca ctgactccca ttccctcttc ccacagagac
ccagggccct gtggagccga gctgggggaa tgcagggcac accatggatg
gcggtatgtg gccaggttcg ggggtggggg gttcctgacc aggctggagg
ggctgga (+2738)

FIG. 12B

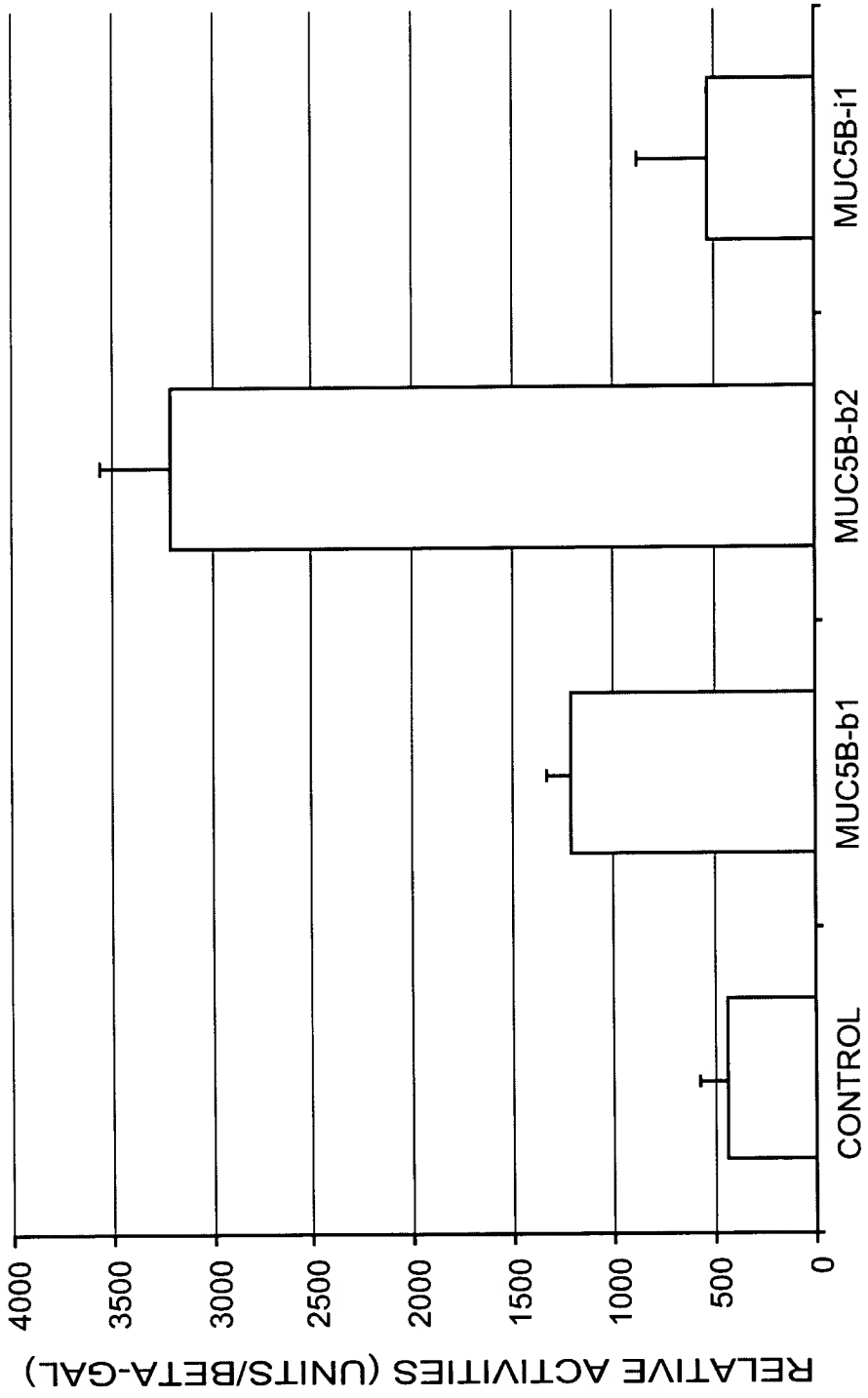
RELATIVE ACTIVITIES (UNITS/BETA-GAL)
4000
3500
3000
2500
2000
1500
1000
500
0
CONTROL
MUC5B-b1
MUC5B-b2
MUC5B-i1

FIG. 13

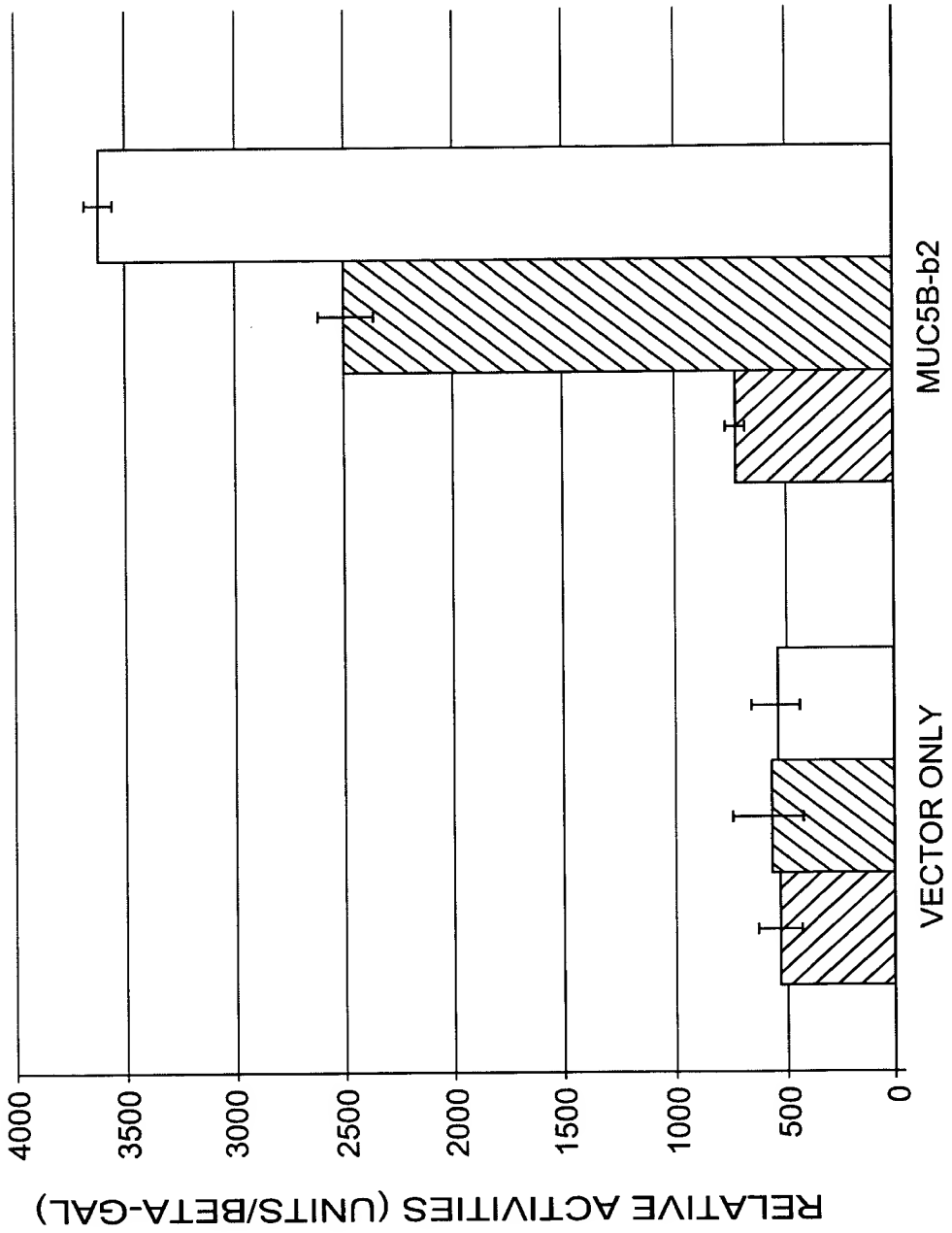
RELATIVE ACTIVITIES (UNITS/BETA-GAL)
4000
3500
3000
2500
2000
1500
1000
500
0
MUC5B-b2
VECTOR ONLY

FIG. 14

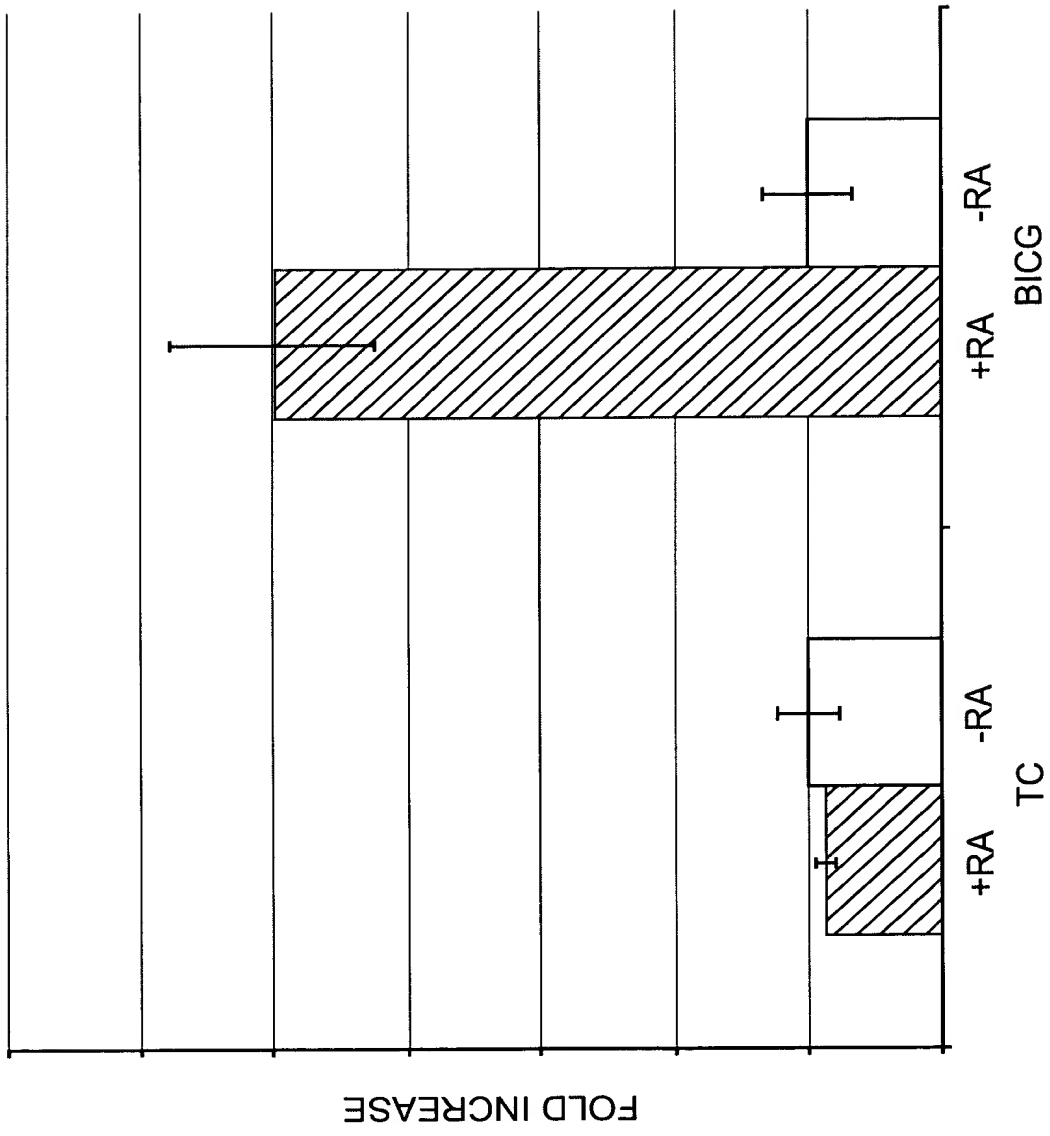

FIG. 15

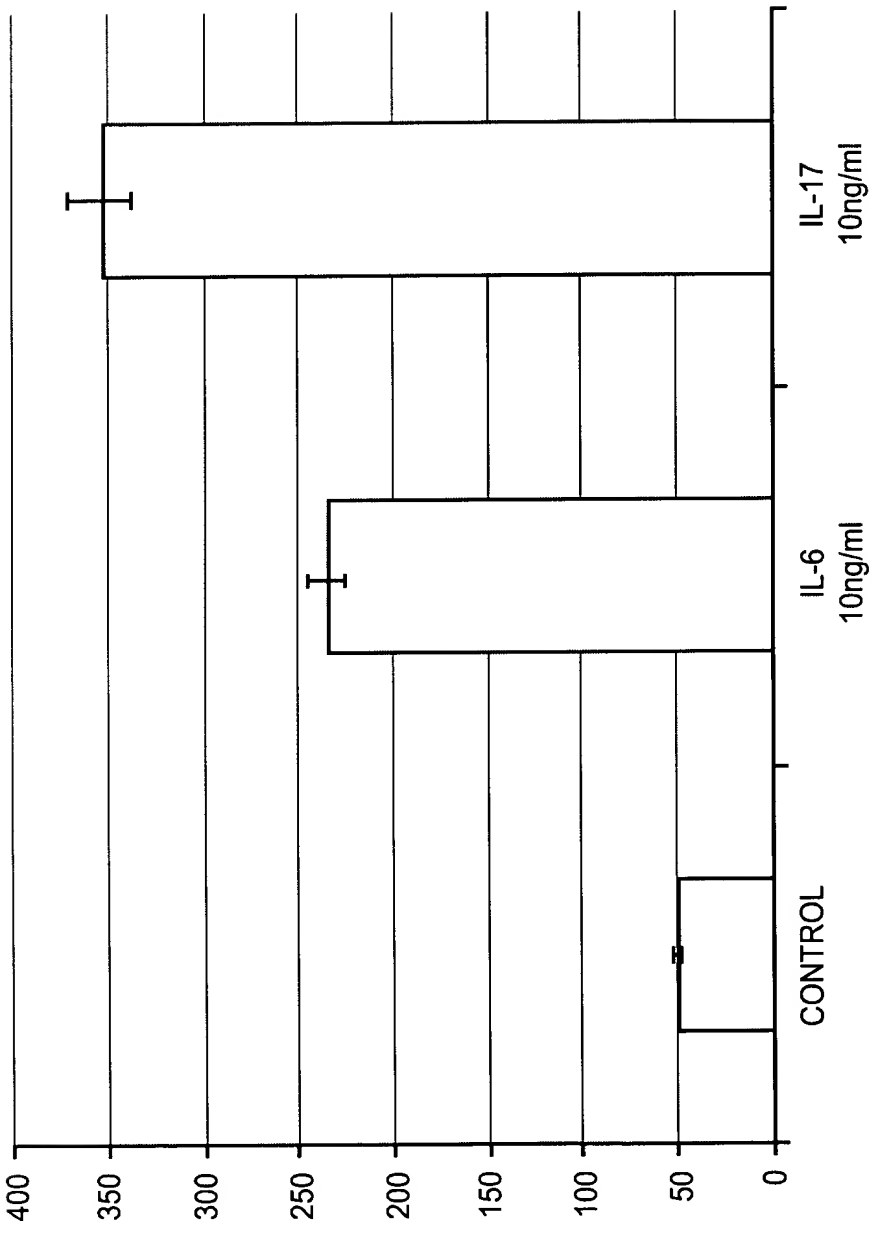
400
350
300
250
200
150
100
50
0
CONTROL
IL-6
10ng/ml
IL-17
10ng/ml

FIG. 16